

## WHAT IS CLAIMED IS:

1. A transmission method for transmitting digital data from a transmitter to a receiver, the transmitter comprising a screen and the method comprising the steps of:

5 displaying the digital data on the screen as a first representation comprising at least one dither pattern, and

deriving from the screen a second representation representative of the first representation.

2. The transmission method according to Claim 1, further comprising the step of:

10 selecting the screen from the group of screens consisting of CRT screens, LCD screens, OLED screens, backlit screens and plasma screens.

3. The transmission method according to Claim 1, further comprising the step of:

15 displaying the at least one dither pattern with a predetermined level of luminance selected from the group consisting of a distribution spanning the range from 0% to 100 % of luminance level.

4. The transmission method according to Claim 1, further comprising the steps of:

20 configuring the first representation to comprise a predetermined level of luminance,

deriving the second representation from the first representation, the second representation being in linear proportion to the predetermined level of luminance of the first representation.

25 5. The transmission method according to Claim 1, further comprising the step of:

configuring each one of the at least one dither pattern to represent at least one bit of data.

30 6. The transmission method according to Claim 1, further comprising the step of:

configuring each one of the at least one dither pattern to represent at least two bits of data.

7. A transmission method for transmitting digital data from a transmitter to a receiver, the transmitter comprising a screen and the method comprising the steps of:

displaying the digital data on the screen as a succession of at least one  
5 pattern defining a first representation,

deriving from the screen a second representation representative of the first representation, and

configuring the at least one pattern of the first representation to comprise at least one dither pattern.

10 8. The transmission method according to Claim 7, further comprising the step of:

selecting the screen from the group of screens consisting of CRT screens, LCD screens, OLED screens, backlit screens and plasma screens.

15 9. The transmission method according to Claim 8, further-comprising the steps of:

integrating a low-pass-filter in the receiver for removal of high frequency scanning effects, and

enabling the receiver for reception of digital data from a screen selected from the group of screens.

20 10. The transmission method according to Claim 7, further comprising the steps of:

deriving at least one image from the first representation, and

deriving the second representation from the at least one image.

11. The transmission method according to Claim 7, comprising the steps of:

25 configuring each at least one dither pattern to comprise a predetermined level of luminance selected from the group consisting of a distribution spanning the range from 0% to 100 % of luminance level, and

deriving the second representation in linear proportion to the predetermined level of luminance of each the at least one dither pattern.

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12. The transmission method according to Claim 7, further comprising the steps of:

configuring each at least one dither pattern to comprise a combination of M dither patterns, where M is at least 2,

5 carrying at least  $\log_2 M$  bits of data in each the at least one dither pattern, and displaying each the at least one dither pattern with a predetermined mutually different level of luminance selected from the group consisting of a distribution spanning the range from 0% to 100% of luminance level.

13. The transmission method according to Claim 7, further comprising the step of:

10 configuring the first representation to comprise a combination of four dither patterns, each one of the four dither patterns carrying two bits of data, and

configuring each one of the four dither patterns with a predetermined mutually different level of luminance selected from the group consisting of a distribution spanning the range from 0% to 100% of luminance level.

14. The transmission method according to Claim 7, further comprising the steps of:

20 configuring the first representation to comprise a combination of eight dither patterns, wherein each one of the eight dither patterns carries three bits of data, and

configuring each one of the eight dither patterns with a mutually different level of luminance selected from the group consisting of a distribution spanning the range from 0% to 100% of luminance level.

15. The transmission method according to Claim 7, further comprising the steps of:

25 defining the screen as an entire display surface, and configuring the entire display surface for display of the at least one first representation.

16. The transmission method according to Claim 15, further comprising the steps of:

30 defining the first representation to comprise more than one first representation, and

configuring the entire display surface for simultaneous display of more than one first representation.

17. The transmission method according to Claim 15, further comprising the steps of:

5 defining a first portion of the screen to comprise a window and defining a second portion of the screen to comprise an area,

configuring the window for display of the at least one first representation,

configuring the area for display of one presentation, and

10 configuring the screen for simultaneously display of the at least one first representation in the window and of the one presentation in the area.

18. The transmission method according to Claim 17, further comprising the steps of:

defining a first portion of the screen to comprise a predetermined number of windows, and

15 defining a second portion of the screen to comprise a preset number of areas,

defining a number of first representations to equal the predetermined number of windows, and defining a number of presentations to equal the preset number of areas,

20 configuring each one of the predetermined number of windows for simultaneous display of, respectively, one of the number of first representations and configuring each one of the preset number of areas for simultaneous display of, respectively, one of the number of presentations, and

25 displaying simultaneously the number of first representations in the first portion of the screen, and displaying simultaneously the number of presentations in the second portion of the screen.

19. The transmission method according to Claim 7, further comprising the step of:

operating the transmitter and the receiver, in combination, in either one of two configurations consisting of a static configuration and a portable configuration.

30 20. The transmission method according to Claim 7, further comprising the step of:

implementing the transmitter to be static and the receiver to be portable.

21. The transmission method according to Claim 7, further comprising the step of:

implementing both the transmitter and the receiver to be portable.

22. The transmission method according to Claim 7, further comprising the step of:

providing the receiver with a feedback signal emission mechanism for confirmation of operation of the transmitter in association with the receiver.

23. The transmission method according to Claim 22, further comprising the step of:

operating at least one transmission phase from the transmitter to the receiver, and

associating a mutually different feedback signal with each at least one transmission phase.

24. A transmitter comprising a processor coupled to a memory storing a processor-readable program and a screen coupled to and driven by the processor for display of digital data originating from a data source, for transmission via the screen of the digital data to a receiver comprising a photo-sensor, and the transmitter comprising:

a first representation of the digital data configured for display on the screen,

a second representation of the digital data being derived by the receiver from the screen, the second representation being representative of the first representation, and

the first representation comprising at least one dither pattern.

25. The transmitter according to Claim 24, further comprising:

the screen being selected from the group of screens consisting of CRT screens, LCD screens, OLED screens, backlit screens and plasma screens.

26. The transmitter according to Claim 24, wherein the at least one dither pattern comprises:

a predetermined level of luminance selected from the group consisting of a distribution spanning the range from 0% to 100 % of luminance level.

27. The transmitter according to Claim 24, wherein  
the first representation comprises a predetermined level of luminance, and  
the second representation is in linear proportion to the predetermined level of  
luminance of the first representation.

5 28. The transmitter according to Claim 24, further comprising:  
each one of the at least one dither pattern representing at least one bit of data.

29. The transmitter according to Claim 24, further comprising:  
each one of the at least one dither pattern representing at least two bits of  
data.

10 30. A transmitter apparatus comprising a processor coupled to a memory  
storing a processor-readable program and a screen coupled to and driven by the  
processor for display of digital data originating from a data source, for  
transmission via the screen of the digital data to a receiver comprising a photo-  
sensor, and the transmitter comprising:

15 at the transmitter:  
a first representation of the digital data configured for display on the  
screen as a succession of at least one pattern, and  
at the receiver:

a second representation being derived from the screen and being  
20 representative of the first representation, and  
the first representation being configured to comprise at least one dither  
pattern.

31. The transmission apparatus according to Claim 30, wherein:  
the screen is selected from the group of screens consisting of CRT screens,  
25 LCD screens, OLED screens, backlit screens and plasma screens.

32. The transmission apparatus according to Claim 31, further comprising:  
a low-pass-filter being integrated in the receiver for removal of high  
frequency scanning effects,  
to enable reception of digital data from a screen selected from the group of  
30 screens.

33. The transmission apparatus according to Claim 30, further comprising:  
at least one image being derived from the first representation, and  
the second representation being derived from the at least one image.

34. The transmission apparatus according to Claim 30, wherein:

5 each at least one dither pattern is configured to comprise a predetermined level of luminance selected from the group consisting of a distribution spanning the range from 0% to 100 % of luminance level, and

the second representation is in linear proportion to the predetermined level of luminance of each the at least one dither pattern.

10 35. The transmission apparatus according to Claim 30, wherein:

each at least one dither pattern of the first representation comprises a combination of M dither patterns, where M is at least 2,

each the at least one dither pattern carries at least  $\log_2 M$  bits of data, and

15 each the at least one dither pattern is configured with a predetermined mutually different level of luminance selected from the group consisting of a distribution spanning the range from 0% to 100% of luminance level.

36. The transmission of levels of luminance apparatus according to Claim 30, wherein:

20 the first representation comprises a combination of four dither patterns, where each one of the four dither patterns carries two bits of data, and each one of the four dither patterns is configured with a predetermined mutually different level of luminance selected from the group consisting of a distribution spanning the range from 0% to 100% of luminance level.

37. The transmission apparatus according to Claim 30, wherein:

25 the first representation comprises a combination of eight dither patterns, where each one of the eight dither patterns carries three bits of data, and each one of the eight dither patterns is configured with a predetermined mutually different level of luminance selected from the group consisting of a distribution spanning the range from 0% to 100% of luminance level.

30 38. The transmission apparatus according to Claim 30, wherein:

the screen defines an entire display surface, and

the entire display surface is configured for display of the at least one first representation.

39. The transmission apparatus according to Claim 38, wherein:

the first representation is defined to comprise more than one first  
5 representation, and

the entire display surface is configured for simultaneous display of more than one first representation.

40. The transmission apparatus according to Claim 38, further comprising:

a first portion of the screen being defined to comprise a window and a second  
10 portion of the screen being defined to comprise an area,

the window being defined for display of the first representation,

the area being configured for display of one presentation, and

the screen being configured for simultaneously display of the at least one representation in the window and of the one presentation in the area.

15 41. The transmission apparatus according to Claim 40, further comprising:

a first portion of the screen being defined to comprise a predetermined number of windows, and

a second portion of the screen being defined to comprise a preset number of areas,

a number of first representations being set to equal the predetermined number  
20 of windows, and

a number of presentations being set to equal the preset number of areas,

each one of the predetermined number of windows being configured for simultaneous display of, respectively, one first representation, and each one of the preset number of areas being configured for simultaneous display, respectively, of  
25 one presentation,

whereby display of the predetermined number of first representations is achieved in the first portion of the screen simultaneously with display of the preset number of presentations in the second portion of the screen.

42. The transmission apparatus according to Claim 30, further comprising:

the transmitter and the receiver operating, in combination, in either one of two  
30 configurations consisting of a static configuration and a portable configuration.



43. The transmission apparatus according to Claim 30, further comprising:  
the transmitter being static and the receiver being portable.
44. The transmission apparatus according to Claim 30, further comprising:  
the transmitter and the receiver being both portable.
- 5 45. The transmission apparatus according to Claim 30, further comprising:  
the receiver being provided with a feedback signal emission mechanism for  
confirmation of operation of the transmitter in association with the receiver.
46. The transmission apparatus according to Claim 45, further comprising:  
at least one operative transmission phase, and
- 10 a mutually different feedback signal being associated with each at least one  
transmission phase.
47. A system comprising a transmitter with a screen operating in association  
with a receiver comprising a photo-sensor positioned in front of and in a field of  
view of the screen, the receiver receiving digital data displayed on the screen, the  
15 system comprising:  
a first representation of the digital data being displayed on the screen,  
a second representation of the digital data being derived by the receiver  
from the screen, the second representation being representative of the first  
representation, and
- 20 the first representation comprising at least one dither pattern.
48. The transmission system according to Claim 47, further comprising:  
the screen is selected from the group of screens consisting of CRT screens,  
LCD screens, OLED screens, backlit screens and plasma screens.
49. The transmission system according to Claim 47, wherein:
- 25 the dither pattern further comprises a predetermined level of luminance  
selected from the group consisting of a distribution spanning the range from 0% to  
100 % of luminance level.
50. The transmission system according to Claim 47, wherein  
the first representation comprises a predetermined level of luminance, and
- 30 the second representation is linearly proportional to the predetermined level of  
luminance of the first representation.

51. The transmission system according to Claim 47, wherein:

each one of the at least one dither pattern representing at least one bit of data.

52. The transmission system according to Claim 47, wherein:

each one of the at least one dither pattern representing at least two bits of  
5 data.

53. A system comprising a transmitter with a screen operating in association  
with a receiver comprising a photo-sensor positioned in front of and in a field of  
view of the screen, the receiver receiving digital data displayed on the screen, the  
system comprising:

10 at the transmitter:

a first representation of the digital data configured for display on the  
screen as a succession of patterns, and

at the receiver:

a second representation being derived from the screen and being  
15 representative of the first representation,

the first representation being configured as a succession of dither patterns.

54. The transmission system according to Claim 53, further comprising:

the screen being selected from the group of screens consisting of CRT  
screens, LCD screens, OLED screens, backlit screens and plasma screens.

20 55. The transmission system according to Claim 54, wherein the receiver  
further comprises:

a low-pass-filter for removal of high frequency scanning effects, the low-  
pass-filter enabling reception of digital data from a screen selected from the group  
of screens.

25 56. The transmission system according to Claim 53, further comprising:

at least one image derived from the first representation on the screen, and  
the second representation being derived from the at least one image.

57. The transmission system according to Claim 53, wherein:

each at least one dither pattern being configured to comprise a predetermined  
30 level of luminance selected from the group consisting of a distribution spanning  
the range from 0% to 100 % of luminance level, and

the second representation being in linear proportion to the predetermined level of luminance of each the at least one dither pattern.

58. The transmission system according to Claim 53, wherein:

each at least one dither pattern of the first representation comprises a  
5 combination of M dither patterns, where M is at least 2,

each the at least one dither pattern carries at least  $\log_2 M$  bits of data, and

each the at least one dither pattern displays a predetermined mutually different level of luminance selected from the group consisting of a distribution spanning the range from 0% to 100% luminance level.

10 59. The transmission system according to Claim 53, wherein:

the first representation comprising a combination of four dither patterns, wherein each one of the four dither patterns carries two bits of data, and each one of the four dither patterns is configured with a predetermined mutually different level of luminance selected from the group consisting of a distribution spanning  
15 the range from 0% to 100% of luminance level.

60. The transmission system according to Claim 53, wherein:

the first representation comprising a combination of eight dither patterns, wherein each one of the eight dither patterns carries three bits of data, and each one of the eight dither patterns is configured with a predetermined mutually  
20 different level of luminance selected from the group consisting of a distribution spanning the range from 0% to 100% of luminance level.

61. The transmission system according to Claim 53, further comprising:

the screen defining an entire display surface, and

the entire display surface being configured for display of the at least one first  
25 representation.

62. The transmission system according to Claim 61, further comprising:

the first representation being defined to comprise more than one first representation, and

the entire display surface being configured for simultaneous display of  
30 more than one first representation.

63. The transmission system according to Claim 61, further comprising:

a first portion of the screen being defined to comprise a window and a second portion of the screen being defined to comprise an area,

the window being defined for display of the first representation,

5 the area being configured for display of one presentation, and

the screen being configured for simultaneously display of the first representation in the window, and of the one presentation in the area.

64. The transmission system according to Claim 63, further comprising:

10 a first portion of the screen being defined to comprise a predetermined number of windows,

a second portion of the screen being defined to comprise a preset number of areas,

a number of first representations being set to equal the predetermined number of windows,

15 a number of presentations being set to equal the preset number of areas,

each one of the predetermined number of windows being configured for simultaneous display of, respectively, one first representation, and

each one of the preset number of areas being configured for simultaneous display, respectively, of one presentation,

20 whereby display of the predetermined number of first representations is achieved in the first portion of the screen simultaneously with display of the preset number of presentations in the second portion of the screen.

65. The transmission system according to Claim 53, wherein

25 the transmitter and the receiver operate, in combination, in either one of two configurations consisting of a static configuration and a portable configuration.

66. The transmission system according to Claim 53, wherein

the transmitter is static and the receiver is portable.

67. The transmission system according to Claim 53, wherein

the transmitter and the receiver are both portable.

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68. The transmission system according to Claim 53, further comprising:  
a feedback signal emission mechanism being integrated within the receiver to provide confirmation of operation of the transmitter in association with the receiver.

- 5 69. The transmission system according to Claim 68, further comprising:  
at least one operative transmission phases, and  
a mutually different feedback signal being associated with each at least one operative transmission phase.